UNITED STATES PATENT AND TRADEMARK OFFICE

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10/656,537	09/05/2003	Karl O. Lillevold	REAL-2006060 (RN121)	8776

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EXAMINER
SENFI, BEHROOZ M

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
		10/656,537	LILLEVOLD, KARL O.
Office Action Summary		Examiner	Art Unit
		BEHROOZ SENFI	2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 January 2009</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,7,11,15,21-26 and 30-40</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,7,11,15,21-26 and 30-40</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

1/2/2009 has been entered.

Claims 2-6, 8-10, 12-14, 16-20 and 27-29 have been canceled.

Claim Rejections - 35 USC § 101

2.   Claims 11 and 32-34 is rejected under 35 U.S.C. 101 because: the claimed

invention is directed to non-statutory subject matter.

Regarding claim 11, it is noted that, the claim invention is directed to "a computer

readable medium containing computer executable instructions that when executed by a

processor, perform a method comprising"; as described in page 4, paragraph 0058 of

the instant application (Pub No. US 2005/0053157), such computer may be a

distribution server distributing encoder 112 and/or decoder 114 on line via private or

public networks/internet, thus is actually a signal. Therefore such invention does not fall

within the statutory classes under 35 U.S.C. 101, and does not satisfy the Interim

Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility,

MPEP 2106.01.

Since claims 32 – 34 are rejected for the same reason as stated in claim 11

above, and also based on the virtue of their dependency to independent claim 11.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 30, 32, 35 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is noted that the specification of the instant application fails to define the limitations, said first predetermined amount of time, and <u>particularly the second predetermined amount of time,</u> as claimed in a full, clear, concise terms to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1, 7, 11, 15, 26, 31, 33, 34, 36-37, and 39-40 are rejected under 35

U.S.C. 103(a) as being unpatentable over MacInnis (US 2003/0189982).

Regarding claim 1, MacInnis '852 discloses, a computer implemented method comprising (i.e., fig. 1), decoding by the computer, a first slice of a first frame of a video by performing a sub-method comprising (please see; fig. 5 elements 550(0) and/or slice 0 and buffer 615A in fig. 6, page 3, paragraphs 0033-0034 and 0036, indicates decoding of the slices; for example, slice 550(0) and/or slice 0 as shown in the figures consider as a first slice of a first frame of a video), transforming the first slice from an encoder state to a decoder state (as shown in fig. 1, compressed input being transfer to the decoders), decoding by the computer the second slice wherein the first and second slices each comprise a plurality of macro-blocks that are respectively selected from the first and second frame of the video (please see; figs. 5-6, elements 550(1) and/or 510(1) and selector 630, buffer 615B; abstract, lines 6-7, page 3, paragraphs 0033-0034 and 0036, indicates decoding of different slices; for example, slice 550(1) and/or slice 1 as shown in the figures consider as a second slice of a second frame of a video).

MacInnis '852 is silent in to particularly mention, determination of the dependency of the slices, suspending the decoding of the slice for predetermined amount of time, slice has not been decoded and has been decoded.

However, MacInnis '982 teaches determining that the first slice has a decoding dependency on a second slice of a second frame of the video (please see, fig. 3, element 303 check/determine dependencies, abstract, lines 1-7, page 1, paragraphs 0005 and 0012, page 2, paragraph 0031 and page 3, paragraph 0035, indicates decoding video by determining dependencies, and processing/decoding rows/slices as soon as its dependencies are met), determining that the second slice has not been

decoded (i.e., determination of whether the dependencies are met for decoding the

row/slice would cover the above limitation, since checking the decoding function on a

row depends to decoding functions on which the decoding function depends for

decoding row/slices, page 1, paragraph 0009, 0014 and page 2, paragraphs 0031-

0032), suspend decoding the first slice for a predetermined amount of time (i.e.,

paragraph 0012, processor waits to perform decoding is equivalent to suspend

decoding), determining that the second slice has been decoded (i.e., determination of

whether the dependencies are met for decoding the row/slice would cover the above

limitation, since checking the decoding function on a row depends to decoding functions

on which the decoding function on another row/slice depends to, page 1, paragraph

0009, 0014 and page 2, paragraphs 0031-0032).

In view of the above, it would have been obvious to one having ordinary skill in

the art at the time of the invention was made to improve the video decoding system of

MacInnis '852 in accordance with the teaching of MacInnis '982 by using multiple

processor/decoders, in order to perform decoding operations in parallel on more than

one row of compressed video data concurrently, as suggested by MacInnis '982 (i.e.,

page 1, paragraphs 0005 and 0008-0009). Further;

MacInnis '982 is silent in regards to particularly mention, "slice header" as

specifies in the claim.

However, MacInnis '982 teaches determination of whether the dependencies of

the row/slices are met to perform the decoding operation; therefore it is clear that the

information related to the slice/row dependencies has to be carried out to the decoder in

order for the decoder to determine the dependencies are met or not to be able to

properly performs decoding operation. it is within the knowledge of one of ordinary skill

in the art at the time of the invention was made to realize that the information related to

the slice/row dependencies carried out to the decoder in the header portion of the

slice/row of the video, in order for the decoder to read the data and based on that

information properly performs the decoding operation.

Regarding claim 7, the combination of MacInnis '852 and MacInnis '982 teaches,

wherein the first and the second frame are the same frame (please see MacInnis, page

3, paragraphs 0031-0032, 0038 and 0040, where indicates buffer 403 as shown in figs.

5-6, receives and stores picture 305 and the selector selectively decodes the macro-

block from different slices of the same picture 305).

Regarding claim 11, the limitations claimed are substantially similar to claim 1

above; therefore the ground for rejecting claim 1 also applies here.

Regarding claim 15, MacInnis '852 discloses, an apparatus comprising (i.e., fig.

1), a buffer to store frames of a video (i.e., figs. 5 and 6, buffer 403 used for storing the

video frames), a first decoding unit coupled to the buffer to decode a first slice of a first

frame of the video by performing a method comprising (please see; figs. 5-6, decoder

409 coupled to the buffer 403 to decode a first slice, i.e., 550(0) and/or 510(0) slice 0, of

a first video frame, page 3, paragraphs 0031-0034), transforming the first slice from an

encoder state to a decoder state (as shown in fig. 1, compressed input being transfer to

the decoders), decoding by the computer the second slice wherein the first and second

slices each comprise a plurality of macro-blocks that are respectively selected from the

first and second frame of the video (please see; figs. 5-6, elements 550(1) and/or 510(1)

and selector 630, buffer 615B; abstract, lines 6-7, page 3, paragraphs 0033-0034 and

0036, indicates decoding of different slices; for example, slice 550(1) and/or slice 1 as

shown in the figures consider as a second slice of a second frame of a video), decode a

second slice of a second frame of the video (please see; figs. 5-6, decoder 409 for

decoding a second slice of a second frame of the video, elements 550(1) and/or 510(1)

slice 1, page 3, paragraphs 0033-0034 and 0036), wherein the first and the second

slices each comprise a plurality of macro-blocks that are respectively selected from the

first and second frame of the video (please see; fig. 6, selector 630 for selecting the

macro-blocks, as indicated in abstract, lines 6-8 and page 3, paragraph 0038 and 0040

decoder selectively decodes the macro-block from the slices; also in abstract, lines 1-9,

page 2, paragraph 0026 and page 3, paragraphs 0034-0035, indicates that the slice

groups do not necessarily comprises macro-blocks that are continuous).

MacInnis '852 is silent in to particularly mention, determining of the dependency

of the slices, suspending the decoding of the slice for predetermined amount of time,

slice has not been decoded and has been decoded, and the second decoding unit, as

specifies in the claim.

However, MacInnis '982 teaches determining that the first slice has a decoding

dependency on a second slice of a second frame of the video (please see, fig. 3,

element 303 check/determine dependencies, abstract, lines 1-7, page 1, paragraphs

0005 and 0012, page 2, paragraph 0031 and page 3, paragraph 0035, indicates

decoding video by determining dependencies, and processing/decoding rows/slices as

soon as its dependencies are met), determining that the second slice has not been decoded (i.e., determination of whether the dependencies are met for decoding the row/slice would cover the above limitation, since checking the decoding function on a row depends to decoding functions on which the decoding function depends for decoding row/slices, page 1, paragraph 0009, 0014 and page 2, paragraphs 0031-0032), suspend decoding the first slice for a predetermined amount of time (i.e., paragraph 0012, processor waits to perform decoding is equivalent to suspend decoding), determining that the second slice has been decoded (i.e., determination of whether the dependencies are met for decoding the row/slice would cover the above limitation, since checking the decoding function on a row depends to decoding functions on which the decoding function on another row/slice depends to, page 1, paragraph 0009, 0014 and page 2, paragraphs 0031-0032).

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to improve the video decoding system of MacInnis '852 in accordance with the teaching of MacInnis '982 by using multiple processor/decoders, in order to perform decoding operations in parallel on more than one row of compressed video data concurrently, as suggested by MacInnis '982 (i.e., page 1, paragraphs 0005 and 0008-0009). Further;

MacInnis '982 is silent in regards to particularly mention, "slice header" as specifies in the claim.

However, MacInnis '982 teaches determination of whether the dependencies of the row/slices are met. In view of this, it is within the knowledge of one of ordinary skill

in the art at the time of the invention was made to realize that the information related as

to how and when the decoder can perform decoding process for the row/slice is

included in the header area of the row/slice and/or stream of the video, in order for the

decoder to read the data and based on that information properly performs the decoding

operation.

Regarding claim 26, the limitations claimed are substantially similar to claim 1

above, therefore the ground for rejecting claim 1 also applies here.

Regarding claims 31, 34, 37 and 40, the combination of MacInnis '982 and

MacInnis '852 teaches   plurality of non-sequential macro-blocks (please see; fig. 6,

selector 630 for selecting the macro-blocks, as indicated in abstract, lines 6-8 and page

3, paragraph 0038 and 0040 decoder selectively decodes the macro-block from the

slices; also in abstract, lines 1-9, page 2, paragraph 0026 and page 3, paragraphs

0034-0035, indicates that the slice groups do not necessarily comprises macro-blocks

that are continuous, i.e., slice comprises non-contiguous macro-blocks).

Regarding claims 33, 36 and 39, the limitations claimed are substantially similar

to claim 7 above; therefore the ground for rejecting claim 7 also applies here.

7.   Claims 21 – 23 and 25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over MacInnis (US 2004/0066852) in view of MacInnis (US

2003/0189982) further in view of Biblil et al. (US 6,704,361).

Regarding claim 21, MacInnis '982 teaches system and method that supports

processing of multiple regions of an image in parallel using multiple decoding units, first

and second decoding units and hardware to perform the process of decoding of the

video frames (please see, fig. 1, decoding units 103).

MacInnis '982 does not particularly teaches "specific integrated circuits (ASIC)"

as specifies in the claim.

Biblil (please see; fig. 1, col. 4, lines 62-col. 5, lines 10) teaches, Preferably

decoding system 100 is configured as an application specific integrated circuit (ASIC)

for the purposes of digital audio/video reception in digital versatile disk (DVD) and

digital video broadcasting (DVB) set-top-box (STB) applications.

In view of the above, it would have been obvious to one having ordinary skill in

the art at the time of the invention was made to configure the decoding system of

MacInnis in accordance with the teaching of Biblil, as an application specific integrated

circuit (ASIC), in order to efficiently decodes variable length DCT coefficients and

motion vectors and minimizes the amount of memory required to decode the various

MPEG variable length codes, as suggested by Biblil (i.e., col. 2, lines 66-col. 3, lines 5).

Regarding claim 22, MacInnis '852 discloses, transmission system for providing a

video stream to a display over a communication medium, communication medium

applications such as, point-to-point link or network, internet, satellite or any combination

thereof (i.e., page 2, paragraphs 0022 – 0023), and decoding unit including

programming instructions designed to perform the decoding of the video frames

respectively (please see; figs. 1 and 5-6, decoding unit 409 and as stated in paragraph

0029, lines 8-12 and page 3, paragraph 30, lines 7-10 indicates decoding process may

be implemented as hardware designed or may be implemented as software on a

programmable processor or some combination thereof to perform the decoding

respectively).

MacInnis '852 does not particularly disclose, "circuit board comprising an

application specific integrated circuit (ASIC)", as specifies in the claim.

Biblil (please see; fig. 1, col. 5, lines 1-3) teaches application specific integrated

circuit (ASIC) board for the purpose of audio/video reception in digital versatile disk and

digital video broadcasting DVB, set-top box STB applications.

In view of the above, it would have been obvious to one having ordinary skill in

the art at the time of the invention was made to configure the decoding system of

MacInnis in accordance with the teaching of Biblil, as an application specific integrated

circuit (ASIC) board, for the purpose of audio/video reception in digital versatile disk and

digital video broadcasting DVB, set-top box STB applications, as suggested by Biblil

(i.e., col. 5, lines 1-7).

Regarding claim 23, MacInnis '852 discloses, transmission system for providing a

video stream to a display over a communication medium, communication medium

applications such as, point-to-point link or network, internet, satellite or any combination

thereof (i.e., page 2, paragraphs 0022 – 0023), and decoding unit including

programming instructions designed to perform the decoding of the video frames

respectively (please see; figs. 1 and 5-6, decoding unit 409 and as stated in paragraph

0029, lines 8-12 and page 3, paragraph 30, lines 7-10 indicates decoding process may

be implemented as hardware designed or may be implemented as software on a

programmable processor or some combination thereof to perform the decoding respectively).

MacInnis '852 does not particularly state, "selected one of a palm sized computing device, a wireless mobile phone, a digital personal assistant, a laptop computing device, a desktop computing device, a set-top box, a server, a digital versatile disk player, a television and a display monitor", as specifies in the claim.

Biblil (please see; fig. 1, col. 5, lines 1-3) teaches the integrated circuit ASIC for the purpose of audio/video reception in digital versatile disk and digital video broadcasting DVB, set-top box STB applications.

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to configure the decoding system of MacInnis in accordance with the teaching of Biblil, as an application specific integrated circuit (ASIC), for the purpose of audio/video reception in digital versatile disk and digital video broadcasting DVB, set-top box STB applications, as suggested by Biblil (i.e., col. 5, lines 1-7).

Regarding claim 25, MacInnis '852 discloses, transmission system for providing a video stream to a display over a communication medium, communication medium applications such as, point-to-point link or network, internet, satellite or any combination thereof (i.e., page 2, paragraphs 0022 – 0023), and decoding unit including programming instructions designed to perform the decoding of the video frames respectively (please see; figs. 1 and 5-6, decoding unit 409 and as stated in paragraph 0029, lines 8-12 and page 3, paragraph 30, lines 7-10 indicates decoding process may

be implemented as hardware designed or may be implemented as software on a

programmable processor or some combination thereof to perform the decoding

respectively).

MacInnis '852 does not particularly state, "selected <u>one of</u> a palm sized

computing device, a wireless mobile phone, a digital personal assistant, a laptop

computing device, a desktop computing device, a set-top box, a server, a digital

versatile disk player, a television and a display monitor, as specifies in the claim.

Biblil (please see; fig. 1, col. 5, lines 1-3) teaches the integrated circuit ASIC for

the purpose of audio/video reception in digital versatile disk and digital video

broadcasting DVB, set-top box STB applications.

In view of the above, it would have been obvious to one having ordinary skill in

the art at the time of the invention was made to configure the decoding system of

MacInnis in accordance with the teaching of Biblil, as an application specific integrated

circuit (ASIC), for the purpose of audio/video reception in digital versatile disk and digital

video broadcasting DVB, set-top box STB applications, as suggested by Biblil (i.e., col.

5, lines 1-7).

Response to Amendment

8.   Applicant's arguments filed 12/1/2008 have been fully considered but they are

not persuasive.

Response to remarks:

Applicant asserts (remarks; page 8, 15-16) that, MacInnis does not teach,

determining in accordance with a slice header the decoding dependency of the slice.

In response, it is noted that, MacInnis '982 teaches determination of whether the dependencies of the row/slices are met to perform the decoding operation; therefore it is clear that the information related to the slice/row dependencies has to be carried out to the decoder in order for the decoder to determine the dependencies are met or not to be able to properly performs decoding operation. it is within the knowledge of one of ordinary skill in the art at the time of the invention was made to realize that the information related to the slice/row dependencies carried out to the decoder in the header portion of the slice/row of the video, in order for the decoder to read the data and based on that information properly performs the decoding operation.

Applicant asserts (remarks; page 8, 24-25) that, MacInnis does not teach, suspending decoding of the slice for a predetermined amount of time.

With respect to applicant's argument; it is noted that MacInnis '982 teaches processor waits, e.g., suspends, to perform decoding operation on the slice/row until the dependencies are met (i.e., paragraph 0012, processor waits to perform decoding is equivalent to suspend decoding for a period of time).

Contact

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Behrooz Senfi whose telephone number is 571-272-7339. The examiner can normally be reached on M-F 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Behrooz Senfi/
Primary Examiner
Art Unit 2621